

It is preferable that the fiberglass mat be provided from a jumbo roll to permit of series of laminated shingles 10 to be continually made through a continuous process. It is also preferred that the fiberglass mat have a width corresponding to the width of two overlays and/or two underlays. In this way, two laminated shingles 10 can be made side-by-side from a single shingle mat, as shown in FIG. 6, with tabs 20a, 20b, 20c and openings 22a, 22b, 22c of one overlay 12a forming complementary tabs and openings of another overlay 12b.

The method for making laminated shingles 10 further comprises the step 112 for coating the fiberglass mat. The fiberglass mat is preferably coated with asphalt coating. The asphalt coating both coats the glass fibers and fills the void spaces between the glass fibers. Powdered limestone (not shown) may be applied to the undersurface of the fiberglass mat after the asphalt-coating provide a dry, non-tacky underside for the asphalt coating. It should be understood that various inert materials may be substituted for, or used in combination with, the powdered limestone for this purpose.

Following the asphalt-coating step 112, the method of the invention comprises the step 114 of applying a layer of granules to the outer surface of the tacky asphalt coated fiberglass mat indicated in FIG. 6 at 48. Lower cost granules may be applied to portions of the fiberglass mat corresponding to the headlap section 16 of the overlay 12. Darker colored granules should be applied to portions of the fiberglass mat corresponding to the leading edge 24a of the tabs 20a, 20b, 20c to form the first shadow line 38. Darker colored granules are also applied to the trailing edge 44 of the underlay 14 to form a second shadow line 40. Lighter colored granules should be applied to the remaining portions of the fiberglass mat. FIG. 6 shows a schematic representation of a storage bin or hopper 50 that may be used to apply the desired surface coating to the fiberglass mat. The hopper 50 includes a plurality of partitions 52 which divide the hopper 50 into a plurality of compartments 56, 58, 60. Some of the compartments 56 of the hopper 50 contain lower cost granules that are applied to portions of the asphalt-coated fiberglass mat 48 corresponding to the headlap section 16 of the overlay 12. Some of the compartments 58 of the hopper 50 contain darker granules which are applied to portions of the fiberglass mat corresponding to the leading edge 24a of the tabs 20a, 20b, 20c and on the trailing edge 44 of the underlay 14. The other compartments 60 of the hopper 50 contain lighter granules that are applied to the remaining portions 42, 46 of the fiberglass mat. It is to be understood that the blend drops (not shown) can also be applied to the remaining portions 42, 46.

As previously noted, an important feature of the present invention includes providing at least one portion 38, 40 of the outer surface 34a, 34b of the tabs 20a, 20b, 20c and the underlay 14 with a relatively uniform mix of darker color granules. The remaining portions 42, 46 of the outer surface 34a, 34b of the tabs 20a, 20b, 20c and the underlay 14 include a uniform mix of lighter color granules in contrast to the shadow lines 38, 40. The shadow lines 38, 40 create the appearance of depth or thickness when the shingles are installed on the roof.

Following the granule applying step 114, the method comprises the step of cutting the fiberglass mat to form the

overlays 12a, 12b and underlays 14a, 14b. As shown by dotted lines in FIG. 6, the fiberglass mat may be cut into two or four horizontal lengths or lanes. Two of the lanes overlap and have widths corresponding to the desired widths of the overlays 12a, 12b. The widths of the other two lanes correspond to the desired widths of the underlays 14a, 14b. The lanes may then be cut laterally to correspond to the desired length of the overlays 12a, 12b and the underlay 14a, 14b. The cut along the central dotted line corresponds with the desired pattern for the tabs 20a, 20b, 20c and the associated openings 22a, 22b, 22c.

As shown in FIG. 6, each lateral cut of the fiberglass mat results in two overlays 12a, 12b and two underlays 14a, 14b which may be assembled with each other to form two laminated shingles 10. The resultant laminated shingles 10 are then packaged for future installation on the surface of a roof. It is to be understood that the underlays could be manufactured in a separate process.

In accordance with the foregoing method, when making two complementary overlays 12a, 12b side-by-side, not only is shadow line 38 created at the leading edge 24a of each tab 20a, 20b, 20c, but also a thin shadow line 64 will be applied to the trailing edge 62 of the tabs 20a, 20b, 20c. It is also preferable that the second shadow line 40 on the underlay be wider than the shadow line 64 on the trailing edge 62 of the tabs 20a, 20b, 20c. For example, the second shadow line 40 can be 1 to ¾ inches wide and the shadow line 64 on the trailing edge 62 of the tabs 20a, 20b, 20c can be ½ to ⅔ inch wide, respectively, for standard size shingles. This is to provide a marked demarcation between the second shadow line 40 and the shadow line 64 (shown in FIG. 1) on the trailing edge 62 of the tabs 20a, 20b, 20c.

It should be understood that the granules of the laminated shingle 10 according to present invention may be placed on the shingles using various procedures and various types of materials. The present invention is not limited to shingles formed by the process shown in FIGS. 6 and 7.

The principle and mode of operation of this invention have been described in its preferred embodiments. However, it should be noted that this invention may be practiced otherwise than as specifically illustrated and described without departing from its scope.

What is claimed is:

1. A laminated roofing shingle comprising:

an overlay having an underside and a plurality of spaced apart tabs, each one of said tabs having a leading edge, a first shadow line and a remaining portion, said tabs defining openings adjacent said tabs;

a layer of granules disposed on said first shadow line of said tabs and on said remaining portion of said tabs, said granules on said first shadow line of said tabs being substantially darker in color than said granules on said remaining portion of said tabs;

an underlay attached to said underside of said overlay to cooperatively form said laminated roofing shingle, said underlay having a leading edge, a second shadow line, and a remaining portion between said leading edge of said underlay and said second shadow line, said leading edge of said underlay generally co-aligning with said leading edge of said tabs, said underlay having a portion exposed through said openings defined adjacent said tabs; and

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a layer of granules disposed on said underlay, said granules on said second shadow line of said underlay being substantially darker than said granules on said remaining portion of said underlay.

2. A laminated roofing shingle according to claim 1, wherein

each one of said tabs further has a trailing edge on a side of said remaining portion of said tabs opposite said leading edge of said tabs, said granules on said first shadow line and said granules on said shadow line on said trailing edge of said tabs being generally uniform in color, said shadow line on said trailing edge of said tabs being substantially narrow relative to said shadow line on said trailing edge of said underlay.

3. A laminated roofing shingle according to claim 1, wherein

said first shadow line defines a minority portion of said tabs and said second shadow line defines a minority portion of said underlay, said remaining portion of said tabs defining a majority portion of said tabs and said remaining portion of said underlay defining a majority portion of said underlay.

4. A laminated roofing shingle according to claim 1, wherein

said overlay and said underlay are each formed from a base material comprising a fiberglass mat that has been coated with asphalt.

5. A laminated roofing shingle according to claim 1, wherein

said granules on said first shadow line and said granules on said second shadow line are black granules.

6. A laminated roofing shingle according to claim 1, wherein

said first shadow line is generally narrow relative to said second shadow line.

7. A laminated roofing shingle comprising:

an overlay having an underside, a headlap section and a plurality of spaced apart tabs extending from said headlap section, said headlap section having a leading edge, each one of said tabs having a leading edge, an outer surface, a first shadow line and a remaining portion, said first shadow line and said remaining portion being on said outer surface of said tabs, said first shadow line extending from said leading edge of said tabs to said remaining portion of said tabs, said tabs and said leading edge of said headlap section defining openings;

a layer of granules disposed on said first shadow line of said tabs and on said remaining portion of said tabs, said granules on said first shadow line of said tabs being substantially darker in color than said granules on said remaining portion of said tabs;

an underlay attached to said underside of said overlay to cooperatively form said laminated roofing shingle, said underlay having an outer surface, a leading edge, a trailing edge, a second shadow line, and a remaining portion between said leading edge of said underlay and said second shadow line, said leading edge of said underlay generally co-aligning with said leading edge of said tabs, said second shadow line and said remaining portion of said underlay being on said outer surface of said underlay, said second shadow line extending from said trailing edge of said underlay to said remaining portion of said underlay, said underlay having a portion exposed through said openings defined by said

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tabs and said leading edge of said headlap section, said second shadow line being exposed through said opening and adjacent said leading edge of said headlap section; and

a layer of granules disposed on said underlay, said granules on said second shadow line of said underlay being substantially darker than said granules on said remaining portion of said underlay.

8. A laminated roofing shingle according to claim 7, wherein

each one of said tabs further has a trailing edge on a side of said remaining portion of said tabs opposite said leading edge of said tabs, and a shadow line on said trailing edge of said tabs, said granules on said first shadow line and said granules on said shadow line on said trailing edge of said tabs being substantially uniform in color, said shadow line on said trailing edge of said tabs being generally narrow relative to said shadow line on said trailing edge of said underlay.

9. A laminated roofing shingle according to claim 7, wherein

said overlay and said underlay are each formed from a base material comprising a fiberglass mat that has been coated with asphalt.

10. A laminated roofing shingle according to claim 7, wherein

said granules on said first shadow line and said granules on said second shadow line are black granules.

11. A laminated roofing shingle according to claim 7, wherein

said first shadow line is generally narrow relative to said second shadow line.

12. A method of making laminated roofing shingle having an overlay and an underlay formed from a base material having an outer surface and an undersurface, the overlay having tabs and openings defined adjacent the tabs, the tabs having leading edges, the underlay having a trailing edge, said method comprising the steps of:

- (a) coating a base material to produce a coated base material;
- (b) forming a granule-covered sheet by applying a layer of granules to the outer surface of the coated base material so as to apply darker granules to portions of the base material corresponding to the leading edge of the tabs of the resultant laminated shingle and on the trailing edge of the underlay of the resultant laminated shingle and apply lighter colored granules to remaining portions of the tabs and the underlay; and
- (c) cutting the granule covered sheet to form the overlay of the resultant laminated shingle and the underlay of the resultant laminated shingle.

13. A method according to claim 12, wherein

said base material is a fiberglass mat comprising glass fibers and void spaces between the glass fibers and said coating steps includes coating the glass fibers and filling the void spaces between the glass fibers.

14. A method according to claim 13, wherein

said coating is an asphalt coating.

15. A method according to claim 14, wherein said coating step further comprises the step of:

applying inert materials to the undersurface of the coated fiberglass mat to make the undersurface non-tacky.

16. A method according to claim 14, wherein said coating step further comprises the step of:

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applying powdered limestone to the undersurface of the fiberglass mat to make the undersurface non-tacky.

17. A method according to claim 12, wherein said cutting step further comprises the steps of:

- (a) cutting the granule covered sheet into two overlapping horizontal lanes, each lane having a width corresponding to the width of the overlay of the resultant laminated shingle; and
- (b) cutting the base material laterally at lengths corresponding to the length of the overlay of the resultant laminated shingle.

18. A method according to claim 16, wherein

said cutting step further includes cutting the base material along a pattern to produce tabs and openings of the overlays of the resultant laminated shingle of two side-by-side overlays, wherein each overlay is complementary to the other overlay.

19. A method according to claim 12, wherein said cutting step further comprises the steps of:

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- (a) cutting the granule covered sheet into four horizontal lanes including two overlapping inner lanes each having a width corresponding to the width of the overlay of the resultant laminated shingle and two outer lanes each having a width corresponding to the width of the underlay of the resultant laminated shingle; and

- (b) cutting the granule covered sheet laterally at lengths corresponding to the length of the overlay and the underlay of the resultant laminated shingle, the overlay and the underlay being substantially the same length.

20. A method according to claim 18, wherein

said cutting step further includes cutting the base material along a pattern to produce tabs and openings of the overlays of the resultant laminated shingle of two side-by-side overlays, wherein each overlay is complementary to the other overlay.

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